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PALEOMAGNETIC STRATIGRAPHY OF THE DEVONIAN-CARBONIFEROUS BOUNDARY BEDS IN THE SOVIET NORTH-EAST AND IN THE FRANCO-BELGIAN BASIN [1] (Short Note)

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(2 figures)

Geomagnetic field inversions are global phenomena which can be used as a stratigraphic tool for confirming or refining biostratigraphic correlations between different environments (marine, non-marine).

Since 1976, comprehensive stratigraphic investigations are being carried out on the Devonian-Carboniferous boundary beds in the northeastern outliers of the Omolon Massif (Soviet North-East). These beds have yielded different fossil groups (both micro- and macro-organisms), which have been compared with those from beds of the same age in the Franco-Belgian Basin. Conodonts and foraminifers have proved to be the most successful fossils for these long-distance correlations. These biostratigraphic investigations are now being completed with paleomagnetic studies. The results of the latter one may be summarized as follows.

1. The Late Famennian to Early Tournaisian period was characterized by a predominantly reverse polarity.
2. During that period, the earth magnetic field has been reversed during relatively short periods, which manifest themselves as subzones of normal polarity in the rock sequence.
3. The age of these subzones of normal polarity has been determined by biostratigraphic methods (fig. 2). At least seven subzones can be distinguished.

DESCRIPTION OF SUBZONES

- **subzone 1** : the middle portion of bed XVI-10 and the middle portion of bed XXV-1 (the *P. semicostatus* conodont zone ;
- **subzone 2** : the upper portion of bed XVII-2, the lower portion of bed XXV-4, beds XII-10, 11, 12, 13 (the *P. obliquicostatus* conodont zone) ;
- **subzone 3** : the upper portion of bed XVII-5, and bed XVII-6 (the *P. extralobatus* conodont zone). In the Hastiere section (Franco-Belgian Basin) two

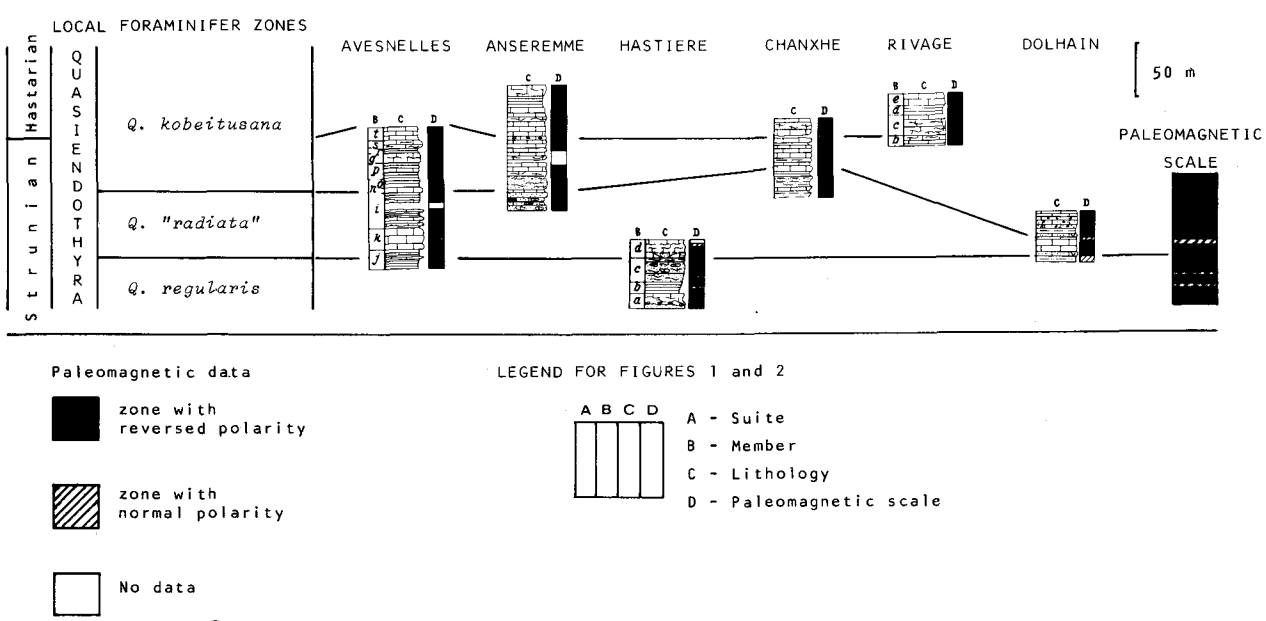

Figure 1.- Paleomagnetic data from Devonian-Carboniferous boundary deposits in Belgium.

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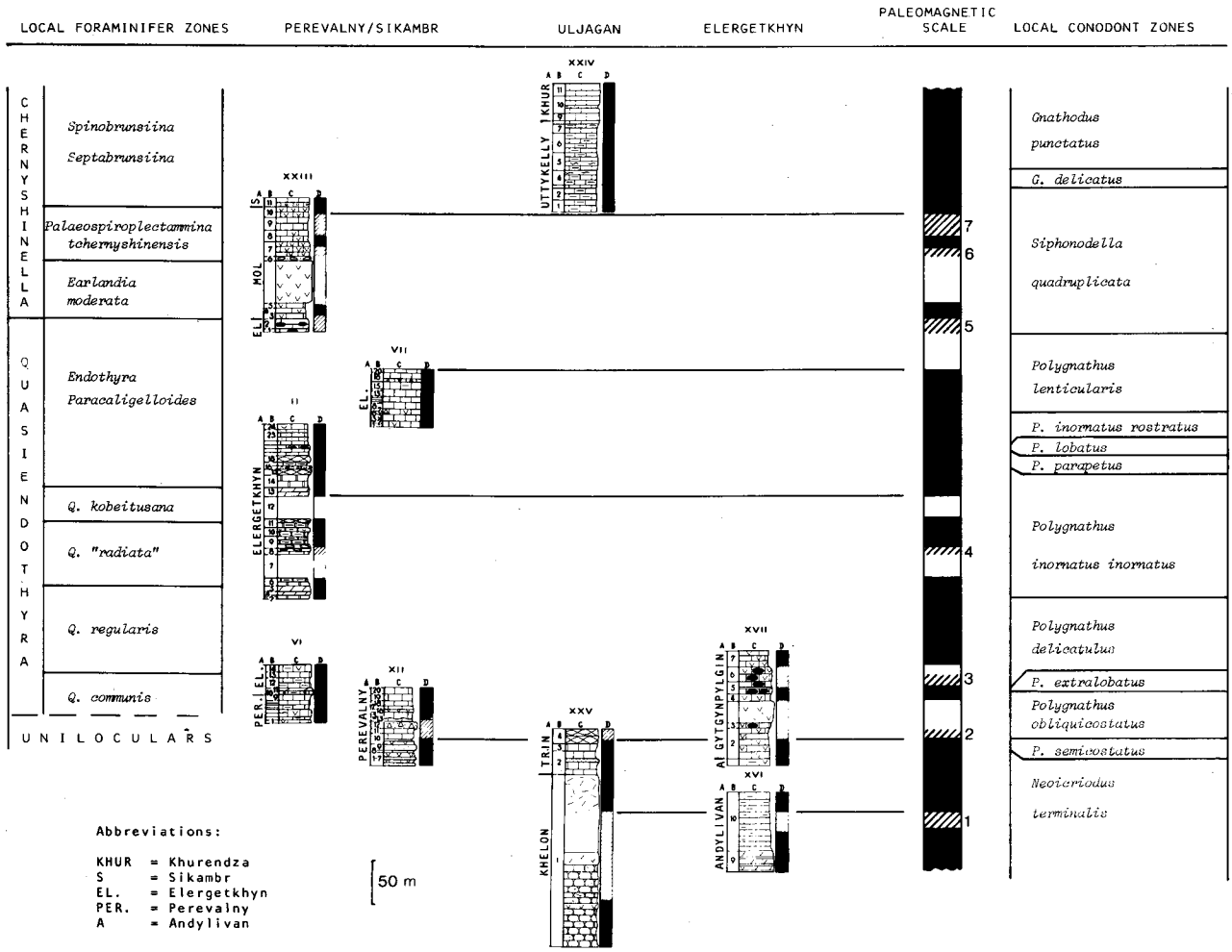

Figure 2.- Paleomagnetic data from Devonian-Carboniferous boundary deposits in Omolon area.

subzones of normal polarity have been identified, one of them occurs in the middle of bed "b", another - in the lower part of bed "c" (fig. 1). Both are included into the foraminiferal zone of *Q. regularis*.

- **subzone 4** : bed II-8 (the *P. inornatus* conodont zone and *Q. radiata* foraminifer zone).
  In the sections of Avesnelles (the middle portion of bed "k"), Hastiere (the upper portion of bed "d") and Dolhain (within the *Q. radiata* foraminifer zone) this subzone of normal magnetization has been identified also.
- **subzone 5** : beds XXIII-1, 2, 3 (the *S. quadruplicata* conodont zone and *Earlandia moderata* foraminifer zone).
- **subzone 6** : bed XXIII-7 (the *S. quadruplicata* conodont zone and *Palaeospiroplectammina tschernyshinensis* foraminifer zone).
- **subzone 7** : the upper portion of bed XXIII-8, bed XXIII-9, the lower portion of bed XXIII-10 (the *S. quadruplicata* conodont zone and *Palaeospiroplectammina tschernyshinensis* foraminifer zone).

BIBLIOGRAPHY

KOLESOV, Ye. V. & LINKOVA, T.I., 1979. Paleomagnetic characteristics of the Upper Famennian - Lower Tournaisian rocks in the Omolon River watershed. Field Excursion Guidebook Tour IX, XIV Pacific Science Congress, Khabarovsk 1979, suppl. 6 : 41-80.